

Remarks/Arguments

Claims 1, 3, and 11 have been amended. In particular, claim 1 has been amended to include the features of original claims 2 and 5, which are now cancelled.

Drawings

The drawings were objected to under 37 C.F.R. § 1.83(a) because it was alleged that the drawings did not show every feature of the invention specified in the claims. Accordingly, new drawing FIG. 2C is provided in the sheet in the attached Appendix following page 12 of this paper.

Rejections under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1, 4-10, 13, 31, 32, and 34 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,825,275 to Stephen R. Tomassetti ("*Tomassetti*"). Applicant respectfully requests reconsideration of this rejection for at least the following reasons.

In the Office Action, the Examiner alleged that *Tomassetti* teaches each and every feature of original claim 1. However, claim 1 has been amended to include features of original dependent claim 2 that are not disclosed in *Tomassetti*. For at least this reason, claim 1 is patentable over *Tomassetti*. Claims 4-10 and 13, 31, 32, and 34 depend from and add additional features to claim 1, and therefore, are likewise patentable over *Tomassetti*.

Claims 1-5, 7, 8, 10, 11, 13, 31, and 34 were rejected under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 5,614,750 to Ellul et al. ("*Ellul*"). Applicant respectfully requests reconsideration of this rejection for at least the following reasons.

As for claim 1, claim 1 has been amended to clarify the subject matter of the present invention as embodied in claim 1. Claim 1 now recites:

an apparatus, comprising:

a semiconductor device formed on a conductivity region, the conductivity region comprises a first type doping material having a first doping concentration;

a low resistive path barrier formed surrounding the conductivity region to isolate the conductivity region and the semiconductor device from a substrate that supports the conductivity region and the low resistive path barrier, the low resistive path barrier comprises the first type doping material having a second doping concentration, wherein the second doping concentration is greater than the first doping concentration;

a deep trench isolation formed surrounding the low resistive path barrier on the opposite side of the conductivity region; and

wherein the semiconductor device is a selected one of CMOS, BiCMOS, NMOS and PMOS.

Applicant respectfully submits that such features are not taught by *Ellul*. In particular, *Ellul* at best only teaches a **bipolar transistor** 90 (i.e., semiconductor device) that includes, among other things, a base region 92, an emitter structure 94, a device well region 57 (i.e., collector), and **a collector electrode 55**, that is surrounded by a deep trench isolation 68. See, for example, col. 1, lines 21-28, col. 2, lines 30-35, col. 4, lines 42-67, and col. 5, lines 1-4. *Ellul* **does not** teach or suggest “**a semiconductor device formed on a conductivity region . . . a low resistive path barrier formed surrounding the conductivity region to isolate the conductivity region and the semiconductor device** from a substrate that supports the conductivity region and the low resistive path barrier” and “**wherein the semiconductor device is a selected one of CMOS, BiCMOS, NMOS and PMOS**” as recited in claim 1. Further note that a bipolar transistor (e.g., bipolar junction transistor – BJT) with a collector, an emitter, and a base), as taught in *Ellul*, **is not** a CMOS, a BiCMOS, an NMOS or a PMOS as alleged by the Examiner. For at least this reason, claim 1 is patentable over *Ellul*.

Claims 3, 4, 7, 8, 10, 11, 13, 31, and 34 depend from independent claim 1 incorporating its recitations. Accordingly, for at the same reasons, claims 3, 4, 7, 8, 10, 11, 13, 31, and 34 are likewise patentable over *Ellul*.

Claims 1, 33, and 34 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,225,674 to Lim et al. (“*Lim*”). Applicant respectfully requests reconsideration of this rejection for at least the following reasons.

As for claim 1, claim 1 has been amended to include features that are not taught or suggested in *Lim*. These features include, for example, "a deep trench isolation formed surrounding the low resistive path barrier on the opposite side of the conductivity region; and wherein the semiconductor device is a selected one of CMOS, BiCMOS, NMOS and PMOS." For at least this reason, claim 1 is patentable over *Lim*. Claims 33 and 34 depend from claim 1, and therefore, likewise patentable over *Lim*.

Rejection under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 12, 14, and 15 under 35 U.S.C. § 103(a) as being unpatentable over *Tomassetti* or *Ellul* in view of U.S. Patent No. 5,939,755 to Takeuchi et al. ("*Takeuchi*"), U.S. Patent No. 5,635,742 to Hoshi et al. ("*Hoshi*"), or U.S. Patent Publication No. 2003/0211701 to Desko et al. ("*Desko*"). Applicant respectfully requests reconsideration of this rejection for at least the following reasons.

Claims 12, 14, and 15 depend from independent claim 1. The deficiencies of *Tomassetti* and *Ellul* as they relate to claim 1 as described above are not cured by the teachings of *Takeuchi*, *Hoshi*, and/or *Desko*. For at least this reason claims 12, 14, and 15 are patentable over *Tomassetti* or *Ellul* in view of *Takeuchi*, *Hoshi*, or *Desko*.

Conclusion

In view of the foregoing, the Applicant respectfully submits that claims 1, 3, 4, 6-15, and 31-34 are in a condition for allowance. Early issuance of Notice of Allowance is respectfully requested.

If the Examiner has any questions, he is invited to contact the undersigned at (503) 796-2099.

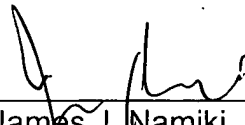
The Commissioner is hereby authorized to charge shortages or credit overpayments to Deposit Account No. 500393.

Respectfully submitted,

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Amendments to the Drawings

The drawings were objected to under 37 C.F.R. § 1.83(a) because it was alleged that the drawings did not show every feature of the invention specified in the claims. Accordingly, a new drawing sheet including FIG. 2C is attached following page 12 of this paper.